TO GET THERE: DESIGNING TOGETHER

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Abstract
This paper will strive to identify and analyse the multiplicity of thread-ed knots which lurk under the surface of a mythologised Renaissance as characterised by monolithic classicism and untangling this to create a shared understanding or language.

The first lens which makes Renaissance theoretical discussions relevant today is that of the establishment of general surveying: Since the Renaissance, architects have been methodically developing the discipline of surveying to understand their present-day paradigm. They sought the "Knowledge" to solve contemporary problems albeit that many of these are derived from personal aesthetic and architectural interests: Palladio intensively surveyed classical Roman temples to learn from them, to understand the Greeks knowledge of the visual representation as recorded by the eye to remediate it such that it is perceived as being correctly proportioned.

The many theoretical statements as espoused in their treatises indicate that often as not they did not believe in the idea that an architect or an artist should work with the notion of pursuing an ideal progress in architecture. A sincere belief in the constant transformation of the structure, its architectural elements and details, was independent of the previous ideas. People naturally have been learning from each other since time immemorial, in the past and the present together: correcting old mistakes and making new ones for next generations to resolve that which connects them with the Renaissance paradigm.

The second lens which makes Renaissance theoretical discussions relevant today is that of the fundamental mechanism of representation of a building via the notion of "drawing": the discovery of perspective and different visual examinations (orthographic drawings and / or axonometric). This new awareness of a geometrical nature of visual experience, and capability to mechanically reproduce images, is one which during the discourse of the Fifteenth and Sixteenth Century resulted from the new awareness of the nature of visual experience.

In that sense, Renaissance theoretical debates are very actual and relevant to contemporary architectural issues. Today's interests of architects turn towards visual awareness in architecture, and, as a result of an influx of the digital revolution, discovering new tools
for exploring spatial characteristics of architecture has become the primary preoccupation of the profession: Together?

Theme: Language
Keywords: architecture, drawing, spatial concepts, renaissance, visual awareness

1. Introduction
This paper stems from the current and ongoing discourse between architects, architectural historians, and architectural students/schools – around the role of architectural history in architectural design and professional practice today. It is motivated and inspired by questions regarding a need for a shared language between architectural history and contemporary architecture (architectural design and practice) which defines the scope of the paper, that of togetherness. The mechanism or vehicle which has been used to discuss this shared language between the past and the present is to use a variety of Renaissance theoretical viewpoints. The method by which this will manifest itself will use the hypotheses of two case studies, which show the possible applications. It can be postulated that the intersections between academic architectural history (delivered in architectural schools around the world) and the design professional practice has been seen as bifurcated into two distinct disciplines as evidenced within the discourse of Society of Architectural Historians (SAH 2018). The hypothesis that these two fields of the architectural discipline need to work together and the reasoning for shared language between past and present will be examined/underlined/revealed. More widely, we seek the means to strengthen the role of architectural history in architectural schools and architectural practice. To explore and define the subject more closely, in this paper, we will deal with questions of:

• How can we inspire dialogue, collaboration, and assimilation between academia and design professions?
• How might the theoretical methodologies gained from an understanding of history, historical processes, and research problem solving serve architectural design and practice today?
• How can these investigations help in achieving the first two points as to the role of a pre-twentieth century work on architectural history, its legacy, and the importance of the design experience conducted and rigorously explained in the early treatises and debates on architecture?

Most importantly, we are interested to examine the pros and cons of challenging the established academic culture in the field of architectural history, and by reframing the disciplinary boundaries between design and historical practice – to possibly invigorate new practical application of the field and introduce a shared understanding of language between the past and the present in architecture.

2. Two Hypotheses: Of Shared Language between Renaissance Architectural Ideas and Contemporary Architecture
The Renaissance has been chosen as a metaphorical vehicle to discuss the connections between the history of architecture and contemporary architecture. The intention is not to have a unique contribution to scholarship on Renaissance, but rather to address the conference theme of togetherness through this case study of threefold relevance of Renaissance architectural theories today. It is our belief that the three essential phenomena that occurred in the Renaissance can be identified as still operative today:

Firstly, social mechanisms that happened and were triggered in the Renaissance period – the Fifteenth Century in Italy can be described as unprecedented and unparalleled in human history; which, as a result, brought to the first globalised approach to architecture and architectural history. The fall of Constantinople and the resulting arrival of numerous Byzantine scholars to Italy in the Fifteenth Century brought Italian intellectuals into contact with ancient Greek philosophy and science, and they were inevitably influenced and encompassed by it.

Secondly, the invention of the printing press in Mid-Fifteenth century enabled the expansion of ideas, knowledge and learning on a scale that had been inconceivable in preceding years.

Thirdly, the expansion of developed urban environments – cities and towns that were developed during that period – as well as the presence of universities providing a fertile ground for considerable intellectual exchange and discourse. All this gradually led to the re-examination and understanding of the dominant worldview. (Mitrovic 2011 P64)

Since the Renaissance, architects have been systematically developing the discipline of surveying and the analysis of historical architecture in order to learn from it. A choice of buildings and details for research and survey was based on personal aesthetic and architectural interest. Palladio intensively surveyed classical Roman temples to learn from them, and surveying (with more precise tools though) still have been one approach and part of the architectural history discipline today.

In the Fifteenth and Sixteenth centuries in Italy, a number of theoretical treatises on architecture were developed and postulated. Their importance for the overall development of theoretical thinking on architecture was varied. Texts are written differently, can be interpreted variously and even read with varying degrees of success. In accordance to that, keeping track of different approaches to architectural history and learning from it in Renaissance architectural treatises, also show shifts, changes and developments. Leon Battista Alberti, wrote the first theoretical treatise in Latin, with many theoretical notions which are often hard to interpret (Alberti, Leoni, & Rykwert, 1955) (Alberti, Leach, Rykwert, & Tavernor 1988). Sebastiano Serlio’s opus of seven separate books and the Libro Extraordinario was a practical manual and the first textbook for an architect-practitioner (Serlio, Hart, & Hicks, 1996 & 2001). Finally, Andrea Palladio’s I Quattro libri dell’architettura offers a theory based on his practical experience as an architect (Palladio, Tavernor, Schofield 1997). The sum of these treaties indicates that each author writes in an individualistic manner and their writings answer to different stimuli that could have been mutual for that specific time. Thus, the Renaissance should not be perceived as a period in history that presents a coherent state of mind of individuals, but rather as a pastiche somewhat analogous of the modern-day Joseph and the Amazing Technicolour Dreamcoat.

However, a specific attitude toward architectural history and historical periods, as well as an idea of the spirit of the times (Zeitgeist) seems to be a common thread that runs through the writings of Renaissance authors and characterises their written and practical work in architecture. It appears that they did not believe in the idea that an architect or an artist should work with the concept of the pursuit of ideal progress in architecture. It also seems that they believed genuinely in the constant transformation of Architecture, architectural elements and its details, that were independent of the previous ideas, and that were always present. People have naturally been learning from each other continuously correcting old mistakes and making new adjustments and substitution.

Alberti’s architectural theory was a systematic application of a more comprehensive humanist programme which formulated architecture as a study of the minds capability to enjoy specific forms (shapes) and to produce them. The approach that forms can be appreciated no matter what is thought about them conceptually has been known since Aristotle (Mitrovic 2011 P42–55). Alberti separated the naming of things from the judgment of their beauty, which is based only on the visual pleasure in observation of a specific form. In that sense, not only was he the first architectural theorist of modern times but also the first advocate of form in architecture. (Jadresin Milic 2014). Alberti believes that individual architects possess the same cognitive capacities, including the capability of aesthetic judgement and evaluation, which means that they can learn one from another even when different time periods divide them. His attitude to history expressed in the Sixth Book of his treatise is a result of that approach. Alberti sees the history as a constant progress, based on the learning about architecture from predecessors. Alberti’s writings on architecture thus reveal his belief in the intuitive capability of an architect to perfect architecture over time by continuous study of proceeding works often in Architectural terms known today as Precedent Studies or Precedent Exemplars. He draws the reader’s attention to how the Ancient Greeks examined and studied formal elements of architecture and how their predecessors solved practical architectural problems. They subsequently changed those elements, adopting them to their own needs and according to their inner sense of good architecture. (Battista, Leach, Rykwert, and Tavernor 1988 VI.3, 158). It is evident that from Alberti’s perspective architects can and should learn from each other even if different time periods divide them. The result is the picture of architectural history as a constant process of perfecting or improving, based on the learning from the past.

Published in 1570 Palladio’s I quattro libri dell’architettura was a different type of treatise. During the Fifteen centuries, the character of architectural treatises had been literary and humanistic. In the Sixteenth century, however, it became more strictly architectural with an emphasis on illustrations. Palladio based his theoretical ideas on colossal architectural practice. For Palladio, nothing, not even the history itself, was the absolute authority. However, he had an urge to illuminate the field of architec-
ture so that those who “come after ourselves can use our example and their intellectual sharpness, and easily supplement the magnificence of their buildings with the sincere beauty and elegance of antique” (Palladio, Tavernor, Schofield 1997 P3). It is evident that Palladio believed in constant study and intimate evaluation of antiquity to reach conclusions about the ways the principles can be applied in the contemporary environment.

Palladio’s specific, active, engaged and dialectic relationships towards history is apparent throughout his second book. He often writes about experiences inherited from the history of architecture (Palladio, Tavernor, Schofield 1997 P75–158). However, to prove the point of such an assertion, he simultaneously presents his architectural works as examples of good practice and application of those experiences. Likewise, the way in which Palladio presents classical temples reveals his idealisation of history to a certain extent. Namely, in his numerous reconstructions of classical temples in the fourth book, which appeared as a result of his surveying on the terrain and the basis of his knowledge of Vitruvius, all temples were presented as ideal reconstructions. Palladio obviously wanted to revive a perfect image of their architecture.

2.2 Renaissance Architectural Practice – Application of the ‘Ideal’

Similarly, as they expressed theoretical ideas differently, the way in which Renaissance architects achieved that detachment between forms and their meanings in practice differs significantly. One of the most common problems to be considered in their architectural practice was: how to apply the ideal image of the classical temple facade to a Christian basilica building that they had designed. A Classical temple’s simple cella (central space of ancient Greek and Romans temples) spatial structure with freestanding columns which bear the tympanum, should have been “applied” to a three naves structure spatial organisation with at least two different heights of those spaces – a high central nave with a lower aisle on either side. The attempt of Renaissance architects to modify the facade of a single – volume buildings to the nave-and-aisles plan of Christian churches and architectural treatment of such a building frontage was an authentic and utterly new problem. (Beltramini 2008 P231) Thus, succeeding to get the main entrance that does have the dignity of a classical temple was not an easy task to solve. Renaissance architects who did have such a commission came out with divergent approaches and solutions.

Alberti’s first architectural assignment was Tempio Malatestiano – the adaptation of the medieval San Francesco church in Rimini for the Sigismondo Malatesta, the ruler of Rimini who commissioned a mausoleum for his family. The building is also known as the first modern example of a classical solution to the problem of the western facade of a Christian church. The awkward shape thus produced was not a typical classical form. Alberti designed a west facade as a combination of a classical temple and a classical triumphal Arch. The fact that Tempio Malatestiano was dedicated to the glory of an earthly ruler may suggest the solution adopted. The choice of a triumphal arch for the church entrance symbolises the idea of victory over death and shows that Alberti applied a powerful meaning to the architectural form that he designed. Alberti was undoubtedly primarily interested in form and how to apply it correctly in his architectural practice, but ideas that were symbolised by that application were of considerable importance to him.

Palladio’s three Venice churches are a significant and entirely different response to the same architectural problem. Palladio’s approach to their west facade incorporated two classical temples overlapping each other. He established a visual statement communicating the idea of two superimposed systems – two interlocking architectural orders. The solution apparently articulated and delineated a hierarchy of a larger one that symbolised higher, holy church overriding a smaller order that symbolised an earthly church. Palladio obviously worked with forms and meanings together here, seeing a church as a clear statement of the proper relationship between the physical and the spiritual worlds. To bring about compositional unity, Palladio had to employ different scales, he incorporated corresponding pediments of classical temple form into his design and resolved the divergent scales of nave and side aisles with a single architectural motif. One possible explanation for this solution is that Palladio was inspired by his drawings of antiquity where he combined section and elevation with orders of different magnitudes on the same sheet (Constant 1993 P98). However, whatever explanation is taken into account the strong symbolic meanings of the buildings is undeniable.

2.3 Second Hypothesis – Making Renaissance Theoretical Discussions Relevant Today: Visual Experience

Theoretical discussions of the Fifteen and Sixteenth century resulted from the new awareness of the geometrical nature of visual experience,
Relevance of Renaissance Architectural Theories Today: Together?

and the capability to mechanically reproduce images. Discovery of perspective and different visual examination influenced this process. In that sense Renaissance, theoretical debates are very actual and relevant for contemporary architecture since interests of architects turn towards visuality in architecture today; and, as a result of the digital revolution, discovering new tools for exploring spatial characteristics of architecture become the main preoccupation of the profession. Often in Renaissance treatises on architecture, there is an active dialectic between the words and the images. It mainly applies to Palladio’s *I quattro libri dell’architettura* In the Preface of his book, Palladio says: “And in all these books I shall avoid the superfluity of words, and simply give those directions that seem to me most necessary” (Palladio, Tavernor & Schofield 1997 Preface).

Palladio tries to balance the two, but still often gives more significant attention to the visual and the drawings usually take the dominant role. Apart from that, it is essential to pay attention to how Palladio renders his drawings. He carefully uses the concept of the plan, the section and the elevation in such a way that the shape and size of individual architectural elements can be read consistently from each displayed format, and in accordance with geometrical rules. All facts on a given architectural element or a building fit at all levels, enabling the drawing to be read as a complete and consistent description of a given shape and form. Architects’ imagination is required in this process to design the spatial relationship between different aspects of the building, as well as to understand the relationships between its plans, sections and different facades. (Mitrovic 2011 P39–41)

It can be read from the drawings in *I quattro libri dell’architettura* where Palladio uses orthogonal projections instead of perspective with a random choice of the viewing point. The plans, sections, and elevations thoroughly render the spatial system of each building. That approach is pushed to almost an abstraction of how different parts fit together when he presents classical orders and their details. From that point on, visual imagery plays a vital role in the creative process of an architect and gets its place in architectural education in schools of architecture around the world.

In his theoretical writings, Palladio does not advocate in favour of optical corrections, which makes him an exception among other architectural theorists of the Renaissance. Palladio believes that buildings should have the proper proportions, regardless of how they are perceived. Palladio often corrects Vitruvius’s ratios by an infinitesimal degree, so the correction could barely be observed. Palladio thus divorces architectural works the way they are perceived. This knowledge affected his approach to drawing and visual communication as well. He almost never used perspective drawings in his architectural representations. He developed a system of presentation that combined various orthogonal projections of architectural elements from different sides. In this way, he rendered their shapes and proportions accurately, although no architectural feature could ever be perceived that way.

3. Two Case Studies - Possible Application of That Shared Language in The Architectural Schools’ Teaching Paradigm.

Most architecture schools around the world teach architectural history and architectural theory, and students devote a significant number of hours to meeting course demands. Unfortunately, however often students resist the courses on architectural history offered in their schools. The fact is that there is no general agreement between scholars and teachers of architectural history about how the content should be delivered, or what is the intended purpose of that knowledge. Renaissance generally, and in our case Palladio’s mainly, believed that architectural history is relevant (in his time – the architecture of classical antiquity) insofar as it teaches architects how to design but with inclusion of their reasoning and common sense, can and should be seen (we believe) as validation for the teaching of architectural history in architecture schools today.

Reflecting on Renaissance theory and practice in the same way Renaissance architects used to learn from history, not by trying merely to emulate it, but rather to use it in a way relevant to students and their design studio tasks – is what our hypothesis proposes. As introduced within Architecture Department at Unitec Institute of Technology Architecture, Auckland and the Faculty of Architecture at Belgrade University. The approach attempts to avoid communicating basic descriptive facts; it is based on interpretations, an indication of personal reactions, setting up challenging cross comparisons and provoking discussions between students. In order to and with an aim to see knowledge of history from the distant to the recent past as help and prerequisite to the active practice of architecture in the Twenty-First century. Two teaching experience or case studies are presented here as an illustration of that approach.
3.1 Case Study – Shared Language: Quoting Renaissance Theoreticians’ Words

Quoting Renaissance theoreticians’ treaties in architectural history and theory classes has been used to initiate discussion and dialogue between students. Students are assigned to read certain parts of (for example) Palladio’s treatises and to find quotes that provide insights into the design approach taken by Palladio in his architectural practice and illustrate how he solves particular design problems. The students are asked to find what and how Palladio argues about, firstly: context, functional, structural and aesthetic qualities of architecture he presents; and/or secondly, about: light, colour, transparency, illusionism, lightness, envelope, patterns, fluidity, re-use of architecture, use and re-use of materials in architecture, that have been in the focus of architectural debates today. They are expected to do so by quoting Palladio whenever he, according to their beliefs, talks for and /or against a particular topic which they are currently researching. In the next step, students discuss and reflect upon a significant issue in quotations they selected, with which they agree or disagree. Finally, they are expected to choose a current design project they have been working on in the studio and think about what attitudes regarding the particular topic might be evident in their work.

In this way, the knowledge gained from Palladio and quoting him has been approached as an ongoing dynamic process discoverable for oneself, rather than something that is handed down. This learning approach does not necessarily expect students to know every aspect of cultural history that stands behind the quoted words but instead gives them a freedom to use their common sense and opinion. From our experience, it encourages students’ inventiveness in research and also raises their interest in reading other historical treatises as well. Those young future architects start to feel a need to know historical works, as written about and executed and to see an immediate application of that knowledge to their future work.

We saw that Palladio’s historical research does not always deliver what it asserts or promises to achieve. His surveys are not entirely accurate, and the design principles he describes in the treatise do not correspond with and are not derived from the surveys of the historical buildings presented in Book Four. Having that in mind, it seems legitimate that analysing and clarifying different theoretical principles and ideas, as well as the relations between architectural theory and design practices...
throughout history, develop students’ awareness of the history and theory of architecture importance for modern architectural design/practice.

3.2 Case Study – Shared Language: Quoting Renaissance Theoreticians’ Drawings (Rendering/Presentation)

After being introduced to Palladio’s architectural treatise and buildings, students at first-year Bachelor of Architectural Studies (BAS) in Architectural History course, are assigned to make hard-line architectural drawings in proper scale (plan, cross-section, elevation, details, etc.) of one building that students have been exploring throughout the semester. We believe that it is important for architecture students to learn all about the process of drawing as soon as possible, to understand it as an essential representational tool of architectural design. First-year students will gradually move from understanding architectural drawing as analytical devices used to depict existing buildings, to seeing architectural drawings as generative instruments for their design studio solutions and future architectural practice.

Page layout of the assignment is also an important aspect since it reveals/shows how those architectural drawings should and can be combined in one sheet of paper to result in a good and successful composition. The way in which the students integrate drawings with titles is also an aspect connected to their design decision making, which they have been learning continuously through all courses at the first-year level.

Later, in the second and third year levels at BAS through Architectural Representation and Critical Studies courses, as well as elective courses (Analytical Drawing et al) – the aim of these courses has been to research principles and procedures of graphic representation of architectural forms / shapes through two-dimensional (sometimes three-dimensional) drawings, with application of learning achieved through Design studio assignments and Architectural History course. Students are assigned to draw architectural drawings of their designs and combine them in scale and orthogonal projections in a way learnt from Palladio’s drawings. Final posters of the assignment have an aim to develop gradually
and permanently analytical, creative and practical skills necessary for active comprehension and participation of students in visual research process.

4. Conclusion

Historical facts are necessarily wrapped in a particular kind of interpretive storytelling, which lends historical narrative the means to move beyond the facts to grasp the present and invent the near future. Can we determine the kinds of questions that the “present” can ask of architecture’s history? Can we “put past in practice” and start asking questions of the past and speculate about the implications of both past and present for the future, instead of only developing methods that deeply privilege narrative? Can students generate “spatial stories” from drawings so that we can bring architecture and history into mutual speculation?

The case studies with the teaching experience presented in the paper are connected directly to the argument that young architects should study the historical works of architecture as architectural works, or more directly: architectural history is relevant insofar as it teaches young architects how to design. It resulted from interviews with established Architectural history/theory and Design studio teachers, done as parts of the two international Conferences organised by the Faculty of Architecture in Belgrade in 2013 and 2014. (Jadresin Milic 2013, 2015) To find out about up-to-date approaches to teaching architectural history and theory in prestigious architecture schools today, questions were asked such as: How should interpret Palladio’s or Alberti’s design principles? And: Is there any logic in the application of those principles in architectural practice today, so that students can see the benefit of their studio tasks?

However, there is not an exact, precise answer as to this formula. Advice has usually been that Palladio, Alberti, or architectural history/theory generally, has been taught/ or should be taught in a way that is relevant as a “key for interpreting the present moment” (Jadresin Milic 2015). The way in which the knowledge is presented to architecture students should not be that the students are assigned to study the architectural historians’ canon of buildings particularly significant to them in particular epochs of historical time. But instead to help them learn something that they experience and trust as having an immediate purpose to them (Jadresin Milic 2013). Students should not be just obliged to knowing things as far as possible, but rather to experience architecture, historical and contemporary together.

Figure 7. Alexandra Jucutan Bachelor of Architectural Studies; Unitec, Auckland; Course: ARCH5311 – Critical Studies 1; Semester 2, 2017 and 2016; Posters of the “Drawing Assignment” – the third part of the “Major” assignment, based in the study of a significant building from a period covered within the course.

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